

REMARKS/ARGUMENTS

Status of the Claims

In the Office Action mailed August 30, 2005, claims 1, 3, 5-16, 18, 19, 21, 22 and 28-30 are pending. Claims 1, 3, 5-16, 18, 19, 21, 22 and 28-30 were rejected. The rejection is respectfully traversed. Claims 1, 5 and 19 have been amended. Applicant has thoroughly reviewed the outstanding Office Action including the Examiner's remarks and the references cited therein.

The following remarks are believed to be fully responsive to the Office Action. All the pending claims at issue are believed to be patentable over the cited references. Reconsideration and withdrawal of the outstanding rejections are respectfully requested in view of the following remarks.

Claim Rejections 35 U.S.C. §112

Claims 5, 7 and 8 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Without conceding the propriety of the rejection, but rather to further prosecution of this application, claim 5 has been amended as suggested. Claims 7 and 8 depend from claim 5. Therefore, Applicant hereby respectfully requests that the rejection to these claims be withdrawn.

Claim Rejections 35 U.S.C. §103(a)

Claims 1, 3, 9-14, 19, 22, 28 and 29

Claims 1, 3, 9-14, 19, 22, 28 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over the Applicant's admitted prior art (APA) in view of U.S. Patent No. 5,429,173 to either Wang, *et al.* (hereinafter referred to as "Wang") or U.S. Patent No. 5,642,853 to Lee. This rejection is respectfully traversed. Without conceding the propriety of the rejection, claims 1 and 19 have been amended. Support for the amendment may be found throughout the specification and figures. No new matter has been added.

The Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. *MPEP*§2142. To establish a *prima facie* case of obviousness, three criteria must be met. First, there must be some suggestion or motivation to modify the references or to combine reference teachings. Second, there must be reasonable expectation of success. Finally, the prior art must teach all the claim limitations. *MPEP*§2142. In light of the following arguments, the combined references do not teach or suggest all of the claim limitations of the present invention. Applicants respectfully point to the final prong of the test which states that the prior art must teach all of the claim limitations. At the very least, the combined references do not teach or suggest all of the limitations of these claims, as stated below.

Claim 1

The APA does not teach or suggest, at least, *inter alia*, "using a rapid solidification spray casting process," as recited in claim 1.

Wang or Lee do not cure the insufficiencies of the APA. Instead Wang is directed to a method for casting metal against a solid metal or a ceramic insert. (Col. 1, lines 56-64). In particular, Wang discloses casting a low melting point metal against the surface of a solid, high melting point material such as another metal or a ceramic. (Col. 2, lines 4-10). Wang does not disclose the rapid solidification spraying.

Lee does not cure the deficiencies of Wang. Rather, Lee discloses a method of bonding copper and steel components for high temperature applications. (Col. 1, line 65 – col. 2, line 4). The two layers are bonded together using an interlayer material such as nickel, copper or a copper alloy. (Abstract). Lee too does not disclose rapid solidification spraying. As the Office Action states, on page 5, Wang nor Lee disclose the rapid solidification spraying.

Accordingly, neither the APA, nor Wang or Lee, alone or in combination, teach or suggest, at least, *inter alia*, “using a rapid solidification spray casting process,” as recited in claim 1.

Claims 3, 5-14 and 28 depend from independent claim 1. Because claim 1 is believed to be in condition for allowance, claims 3, 5-14 and 28 are also believed to be in condition for allowance, at least by reason of their dependency. Accordingly, withdrawal of the rejection is respectfully requested.

Claim 19

For the reasons previously discussed, neither the APA, nor Wang or Lee, alone or in combination, teach or suggest, at least, *inter alia*, “wherein a rapid solidification spray casting process is used,” as recited in claim 19. Claims 21-22 and 29 depend from independent claim

19. Because claim 19 is believed to be in condition for allowance, claims 21-22 and 29 are also believed to be in condition for allowance, at least by reason of their dependency. Accordingly, withdrawal of the rejection is respectfully requested.

Claims 5-8, 15, 16, 18, 21 and 30

Claims 5-8, 15, 16, 18, 21 and 30 are rejected under 35 U.S.C. §103(a) as being unpatentable over the APA in view of either Wang or Lee as applied to claims 1 and 19 above, and further in view of U.S. Patent No. 5,343,926 to Cheskis, *et al.*, (hereinafter referred to as Cheskis).

All the limitations are not taught or suggested by the prior art

Cheskis is generally directed to spray casting a metal or metal alloy to reduce porosity. (Col. 3, lines 59-62). Cheskis is directed to, “the process of the instant invention is particularly useful for making metal or metal alloy strip that can be removed from a collecting member 18 with the collecting member moving at a continuous rate.” (Col. 4, lines 55-59). Thus, Cheskis sprays a metal or metal alloy onto a substrate and then peels off the solidified metal. A person skilled in the art would be dissuaded from using this spray on technique that allows the metal to be removed after being sprayed onto the substrate. In contrast, the present invention does not peel off and provides a permanent bond to the substrate. Therefore, Cheskis actually teaches away from the present application.

Moreover, that Applicant does not allow the metal to be removed from the substrate because this will cause contamination of the excess solidified material. Such contamination would be disadvantageous in that remelting the excess would not be feasible. The ability to

reuse the excess material would be greatly decreased and additional steps may be necessary to remove the contaminant for reuse. Furthermore, Applicant does not permit the metal to be removed from the substrate because such removal would degrade the chill blocks and necessitate that the chill blocks be constantly monitored and replaced as more and more material is removed. This is disadvantageous in that it would be time consuming and costly to replace the chill blocks if the metal is removed. Thus, Applicant provides a permanent bond to the substrate that does not peel off.

No motivation to combine

Furthermore, to establish a *prima facie* case of obviousness, there must be some suggestion or motivation to modify the references or to combine reference teachings. *MPEP* §2142. It is respectfully submitted that the first prong of establishing a *prima facie* case of obviousness has not been met. In the Office Action, the Examiner relied on no less than four references and a generalized reliance of the skill level in the art to achieve the claimed invention. Without a motivation to combine, a rejection based on a *prima facie* case of obviousness is improper. *MPEP* §2143.01. (*In re Rouffet*, 149 F.3d 1350,1357 (Fed. Cir. 1998)).

In addition, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of such a combination. *MPEP* §2143.01. (*In re Mills*, 916 F.2d 680 (Fed. Cir. 1990)). In the Office Action, each of the four cited references and additional reliance on a skill level in the art are combined in ways not suggested by any of the references.

Moreover, the level of skill in the art cannot be relied upon to provide the suggestion to combine references. *MPEP* §2143.01. (*Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308 (Fed. Cir.

1999)). A mere statement that modifications of the prior art to meet the claimed invention would have been, “well within the ordinary skill of the art at the time the claimed invention was made,” simply because the references relied upon teach that all aspects of the claimed invention were individually known in the art, is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *MPEP §2143.01. (Ex parte Levengood, 28 USPQ2D 1300 (Bd. Pat. App. & Inter. 1993))*.

Here the Office Action uses no less than four references and a general assertion that, “one of ordinary skill in the art would have recognized the need for at least a step of light machining . . . of the edge of the substrate,” as stated on pages 6-7. Picking and choosing elements from four different references and relying on a general assertion on a skill level of one skilled in the art conjures up the specter of hindsight reasoning and is improper. In and of itself, the lack of a proper motivation to combine is inappropriate. Therefore, using four references and asserting that it would have been obvious to combine all four is improper. Thus, the Office Action provides insufficient basis for a 35 U.S.C. §103 rejection.

It is respectfully submitted that the Office Action does not present an objective reason to combine the references and therefore, the cited art cannot be said to suggest the claimed invention. Furthermore, the APA, Wang, Lee or Cheskis, alone or in combination, do not teach or suggest, at least, *inter alia*, a “using a rapid solidification spray casting process,” as recited in claim 1 and similarly in claims 15 and 19.

Claims 3, 5-14 and 28 depend from independent claim 1 and claims 21-22 and 29 depend from claim 19. Because claims 1 and 19 are believed to be in condition for allowance, claims 3, 5-14, 21-22 and 28-29 are also believed to be in condition for allowance, at least by reason of

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their dependency. Accordingly, withdrawal of the rejection of these claims is respectfully requested.

CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that this application is in condition for allowance. Should the Examiner believe that anything further is necessary to place the application in even better condition for allowance, the Examiner is invited to contact the undersigned attorney at 202-861-1746 in an effort to resolve any matter still outstanding before issuing another action.

In the event this paper is not timely filed, Applicant petitions for an appropriate extension of time. Please charge any fee deficiencies or credit any overpayments to Deposit Account No. 50-2036 with reference to our Docket No. 87324.1800.

Respectfully submitted,

BAKER & HOSTETLER LLP



Rabiya S. Kader
Reg. No. 48,160

Date: November 30, 2005
Washington Square, Suite 1100
1050 Connecticut Avenue, N.W.
Washington, D.C. 20036-5304
Telephone: 202-861-1500
Facsimile: 202-861-1783